

US009636767B2

(12) United States Patent

Oberndorfer et al.

(54) PLUG PART AND SOCKET PART FOR DETACHABLY CONNECTING A TUBE ELBOW OF A GAS-COOLED WELDING TORCH TO A HOSE PACKET, AND CONNECTING DEVICE WITH SUCH A PLUG PART AND SOCKET PART

(71) Applicant: Fronius International GmbH,

Pettenbach (AT)

(72) Inventors: Klaus Oberndorfer, Vorchdorf (AT);

 $\textbf{Daniel Platzer}, \ Wels \ (AT); \ \textbf{Wolfgang}$

Attwenger, Neukirchen (AT)

(73) Assignee: Fronius International GmbH,

Pettenbach (AT)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/388,893

(22) PCT Filed: Mar. 6, 2013

(86) PCT No.: PCT/AT2013/050056

§ 371 (c)(1),

(2) Date: Sep. 29, 2014

(87) PCT Pub. No.: WO2013/142887

PCT Pub. Date: Oct. 3, 2013

(65) Prior Publication Data

US 2015/0306695 A1 Oct. 29, 2015

(30) Foreign Application Priority Data

Mar. 30, 2012 (AT) 50114/2012

(51) **Int. Cl.**

B23K 9/32 (2006.01)

B23K 9/29 (2006.01)

(10) Patent No.: US 9,636,767 B2

(45) **Date of Patent:** May 2, 2017

(52) U.S. Cl. CPC *B23K 9/323* (2013.01); *B23K 9/295*

(58) Field of Classification Search

CPC B23K 9/293

(Continued)

(56) References Cited

U.S. PATENT DOCUMENTS

4,270,824 A * 6/1981 Erickson B23K 9/323 219/137.63

4,549,068 A * 10/1985 Kensrue B23K 9/323 219/137.31

(Continued)

FOREIGN PATENT DOCUMENTS

CN 2624052 Y 7/2004 DE 21 46 404 A1 8/1973

(Continued)

OTHER PUBLICATIONS

International Search Report of PCT/AT2013/050056, mailed Nov.

4, 2013.

(Continued)

Primary Examiner — Thien S Tran

(74) Attorney, Agent, or Firm — Collard & Roe, P.C.

(57) ABSTRACT

A plug part for detachably connecting a torch neck of a gas-cooled welding torch to a socket part disposed on a hose package includes a cylindrical pipe element with a flange and with an axially extending channel for a welding wire and for a protective gas and includes a union nut which is rotatably disposed on the pipe element and which includes an inner thread for connection to a corresponding outer thread on the socket part. To produce an optimal connection between the torch neck and the hose package, a bevel is disposed on the flange of the pipe element of the plug part, and the end piece of the socket part has at least one axial slot.

11 Claims, 5 Drawing Sheets

